

REMARKS

By this Amendment the specification has been amended to better comply with U.S. practice, new claims 74 and 75 have been added (claim 74 represents claim 39 written in independent form and claim 75 represents claim 50 written in independent form), claims 39 and 50 have been canceled, claim 51 has been amended to directly depend from claim 48, and claims 48, 51, 60 and 68 have been corrected. Entry is requested.

In the outstanding Office Action the examiner has rejected claims 32, 34, 35, 37, 39-48, 54-61, 64, 70, 72 and 73 under 35 U.S.C. 102(b) as being anticipated by Muncheryan, he has rejected claims 33 and 71 under 35 U.S.C. 103(a) as being unpatentable over Muncheryan in view of Brown (US 2007/0121689), he has objected to claims 36, 38, 49, 50, 53, 62, 65, 68 and 69 as being dependent on a rejected base claim, and he has objected to claims 51, 52, 63, 64, 66 and 67 due to dependency from claims which have been objected to.

The applicants thank the examiner for his indication of allowable claims, and asserts that new claim 75 should be immediately allowed.

However, they assert that the examiner's prior art rejections are incorrect!

Muncheryan describes a modular interchangeable laser instrumentation system for applications in industrial processing, medical surgery and treatment, dental treatment, metrology, military applications, forensic investigation, micromachining, optical storage, spectroscopic and research. The system comprises a handheld stylus with interchangeable modules to produce various selected laser-radiation beams for any particular work as needed. Each module and the combined modular stylus is adapted to produce a particular type of laser beam for the intended project in hand.

Muncheryan discloses such well known features of the present application as a Q-switched, pumped solid-state laser with a pulsed light source, a solid laser crystal, a Q-switching device for increasing the power density, a focusing device, a mirror, and a resonator. But the laser system disclosed in Muncheryan is not suitable to be used as a laser ignition device in a combustion engine.

In the present invention state of the art elements such as a resonator, an active laser medium, laser diodes and Q-switch elements are integrated in a single component to generate a laser pulse of sufficiently high power density to enable formation of an optical breakdown plasma to be used for the ignition of combustible fuel-air mixtures.

From the literature it is known that such a result can be achieved with pulsed laser radiation provided that the laser pulses provide an energy of about 5 mJ within a pulse duration of 1-10 ns (laser focus power density in order of 0.5 to 5 MW).

The object of the present invention thus was to refine the state of technology laser components and component arrangements in order to achieve the power density levels.

The ultimate requirement is described by the phrase "laser ignition device" (see claim 32 of present application) rather than "laser system".

Such ignition application is not achievable with the laser system described by Muncheryan, and he does not include such ignition applications within his list of applications (see Muncheryan, column 9, applications of the systems). The laser system of Muncheryan cannot provide the necessary power density levels for ignition of a fuel-air mixtures, and therefore it cannot be used as ignition device for an internal combustion engine.

Nothing in Brown would overcome the noted deficiency in Muncheryan.

Favorable reevaluation is requested.

The additional claims fee can be charged to Deposit Account No. 04-2223.

Respectfully submitted,

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